

## Introduction - Grade 5 Science

The following released test questions are taken from the Grade 5 Science Standards Test. This test is one of the California Standards Tests administered as part of the Standardized Testing and Reporting (STAR) Program under policies set by the State Board of Education.

All questions on the California Standards Tests are evaluated by committees of content experts, including teachers and administrators, to ensure their appropriateness for measuring the California academic content standards in Grade 5 Science. In addition to content, all items are reviewed and approved to ensure their adherence to the principles of fairness and to ensure no bias exists with respect to characteristics such as gender, ethnicity, and language.

This document contains released test questions from the California Standards Test forms in 2004 and 2005. First on the pages that follow are lists of the Grades 4 and 5 standards assessed on the Grade 5 Science Test. Note that Grade 5 Earth Sciences Standard 3.e is not assessed on the Grade 5 Science Test and, therefore, is not represented in these released test questions. Next are released test questions. Following the questions is a table that gives the correct answer for each question, the content standard that each question is measuring, and the year each question appeared on the test. Reference sheets, provided for students taking the test, are also included as they are necessary in answering some of the questions.

The following table lists each reporting cluster, the number of items that appear on the exam, and the number of released test questions that appear in this document. Note that the questions testing the Investigation and Experimentation content standards are embedded within the correlating reporting cluster (i.e. Grade 5 Physical Sciences).

REPORTING CLUSTER	NUMBER OF QUESTIONS ON EXAM	NUMBER OF RELEASED TEST QUESTIONS
Physical Sciences		
Grade 5 (Standards: 5PS1. a-i)	11	4
Grade 4 (Standards: 4PS1. a-g)	8	5
Life Sciences		
Grade 5 (Standards: 5LS2. a-g)	13	7
Grade 4 (Standards: 4LS2. a-c, 4LS3. a-d)	9	5
Earth Sciences		
Grade 5 (Standards: 5ES3. a-e, 5ES4. a-e, 5ES5. a-c)	11	5
Grade 4 (Standards: 4ES4. a-b, 4ES5. a-c)	8	4
TOTAL	60	30

In selecting test questions for release, three criteria are used: (1) the questions adequately cover a selection of the academic content standards assessed on the Grade 5 Science Test; (2) the questions demonstrate a range of difficulty; and (3) the questions present a variety of ways standards can be assessed. These released test questions do not reflect all of the ways the standards may be assessed. Released test questions will not appear on future tests.

For more information about the California Standards Tests, visit the California Department of Education's Web site at <http://www.cde.ca.gov/ta/tg/sr/resources.asp>.

## THE PHYSICAL SCIENCES REPORTING CLUSTER

The following nine California content standards are included in the Grade 5 Physical Sciences reporting cluster and are represented in this booklet by four test questions. These questions represent only some ways in which these standards may be assessed on the California Grade 5 Science Standards Test.

### CALIFORNIA CONTENT STANDARDS IN THIS REPORTING CLUSTER

#### Physical Sciences

#### Grade 5 Standards

- |                |  |
|----------------|--|
| <b>5PS1.</b>   | <b>Elements and their combinations account for all the varied types of matter in the world. As a basis for understanding this concept:</b>   |
| <b>5PS1.a.</b> | <i>Students know</i> that during chemical reactions the atom in the reactants rearrange to form products with different properties.  |
| <b>5PS1.b.</b> | <i>Students know</i> all matter is made of atoms, which may combine to form molecules.   |
| <b>5PS1.c.</b> | <i>Students know</i> metals have properties in common, such as high electrical and thermal conductivity. Some metals, such as aluminum (Al), iron (Fe), nickel (Ni), copper (Cu), silver (Ag), and gold (Au), are pure elements; others, such as steel and brass, are composed of a combination of elemental metals. |
| <b>5PS1.d.</b> | <i>Students know</i> that each element is made of one kind of atom and that the elements are organized in the periodic table by their chemical properties.   |
| <b>5PS1.e.</b> | <i>Students know</i> scientists have developed instruments that can create discrete images of atoms and molecules that show that the atoms and molecules often occur in well-ordered arrays.   |
| <b>5PS1.f.</b> | <i>Students know</i> differences in chemical and physical properties of substances are used to separate mixtures and identify compounds.   |
| <b>5PS1.g.</b> | <i>Students know</i> properties of solid, liquid, and gaseous substances, such as sugar ( $C_6H_{12}O_6$ ), water ( $H_2O$ ), helium (He), oxygen ( $O_2$ ), nitrogen ( $N_2$ ), and carbon dioxide ( $CO_2$ ).  |
| <b>5PS1.h.</b> | <i>Students know</i> living organisms and most materials are composed of just a few elements.  |
| <b>5PS1.i.</b> | <i>Students know</i> the common properties of salts, such as sodium chloride (NaCl).   |

## THE PHYSICAL SCIENCES REPORTING CLUSTER

The following seven California content standards are included in the Grade 4 Physical Sciences reporting cluster and are represented in this booklet by five test questions. These questions represent only some ways in which these standards may be assessed on the California Grade 5 Science Standards Test.

### CALIFORNIA CONTENT STANDARDS IN THIS REPORTING CLUSTER

#### Physical Sciences

#### Grade 4 Standards

- |                |   |
|----------------|---|
| <b>4PS1.</b>   | <b>Electricity and magnetism are related effects that have many useful applications in everyday life. As a basis for understanding this concept:</b>              |
| <b>4PS1.a.</b> | <i>Students know</i> how to design and build simple series and parallel circuits by using components such as wires, batteries, and bulbs.                         |
| <b>4PS1.b.</b> | <i>Students know</i> how to build a simple compass and use it to detect magnetic effects, including Earth's magnetic field.                                       |
| <b>4PS1.c.</b> | <i>Students know</i> electric currents produce magnetic fields and know how to build a simple electromagnet.  |
| <b>4PS1.d.</b> | <i>Students know</i> the role of electromagnets in the construction of electric motors, electric generators, and simple devices, such as doorbells and earphones. |
| <b>4PS1.e.</b> | <i>Students know</i> electrically charged objects attract or repel each other.  |
| <b>4PS1.f.</b> | <i>Students know</i> that magnets have two poles (north and south) and that like poles repel each other while unlike poles attract each other.                    |
| <b>4PS1.g.</b> | <i>Students know</i> electrical energy can be converted to heat, light, and motion.   |

## THE LIFE SCIENCES REPORTING CLUSTER

The following seven California content standards are included in the Grade 5 Life Sciences reporting cluster and are represented in this booklet by seven test questions. These questions represent only some ways in which these standards may be assessed on the California Grade 5 Science Standards Test.

### CALIFORNIA CONTENT STANDARDS IN THIS REPORTING CLUSTER

#### Life Sciences

##### Grade 5 Standards

<b>5LS2.</b>	<b>Plants and animals have structures for respiration, digestion, waste disposal, and transport of materials. As a basis for understanding this concept:</b>
<b>5LS2.a.</b>	<i>Students know</i> many multicellular organisms have specialized structures to support the transport of materials.
<b>5LS2.b.</b>	<i>Students know</i> how blood circulates through the heart chambers, lungs, and body and how carbon dioxide (CO <sub>2</sub> ) and oxygen (O <sub>2</sub> ) are exchanged in the lungs and tissues.
<b>5LS2.c.</b>	<i>Students know</i> the sequential steps of digestion and the roles of teeth and the mouth, esophagus, stomach, small intestine, large intestine, and colon in the function of the digestive system.
<b>5LS2.d.</b>	<i>Students know</i> the role of the kidney in removing cellular waste from blood and converting it into urine, which is stored in the bladder.
<b>5LS2.e.</b>	<i>Students know</i> how sugar, water, and minerals are transported in a vascular plant.
<b>5LS2.f.</b>	<i>Students know</i> plants use carbon dioxide (CO <sub>2</sub> ) and energy from sunlight to build molecules of sugar and release oxygen.
<b>5LS2.g.</b>	<i>Students know</i> plant and animal cells break down sugar to obtain energy, a process resulting in carbon dioxide (CO <sub>2</sub> ) and water (respiration).

## THE LIFE SCIENCES REPORTING CLUSTER

The following seven California content standards are included in the Grade 4 Life Sciences reporting cluster and are represented in this booklet by five test questions. These questions represent only some ways in which these standards may be assessed on the California Grade 5 Science Standards Test.

### CALIFORNIA CONTENT STANDARDS IN THIS REPORTING CLUSTER

#### Life Sciences

#### Grade 4 Standards

- |                |   |
|----------------|---|
| <b>4LS2.</b>   | <b>All organisms need energy and matter to live and grow. As a basis for understanding this concept:</b>  |
| <b>4LS2.a.</b> | <i>Students know</i> plants are the primary source of matter and energy entering most food chains.  |
| <b>4LS2.b.</b> | <i>Students know</i> producers and consumers (herbivores, carnivores, omnivores, and decomposers) are related in food chains and food webs and may compete with each other for resources in an ecosystem. |
| <b>4LS2.c.</b> | <i>Students know</i> decomposers, including many fungi, insects, and microorganisms, recycle matter from dead plants and animals.   |
| <b>4LS3.</b>   | <b>Living organisms depend on one another and on their environment for survival. As a basis for understanding this concept:</b>   |
| <b>4LS3.a.</b> | <i>Students know</i> ecosystems can be characterized by their living and nonliving components.  |
| <b>4LS3.b.</b> | <i>Students know</i> that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.   |
| <b>4LS3.c.</b> | <i>Students know</i> many plants depend on animals for pollination and seed dispersal, and animals depend on plants for food and shelter.   |
| <b>4LS3.d.</b> | <i>Students know</i> that most microorganisms do not cause disease and that many are beneficial.  |

## THE EARTH SCIENCES REPORTING CLUSTER

The following 13 California content standards are included in the Grade 5 Earth Sciences reporting cluster and are represented in this booklet by five test questions. These questions represent only some ways in which these standards may be assessed on the California Grade 5 Science Standards Test.

### CALIFORNIA CONTENT STANDARDS IN THIS REPORTING CLUSTER

#### Earth Sciences

##### Grade 5 Standards

- |                |  |
|----------------|--|
| <b>5ES3.</b>   | <b>Water on Earth moves between the oceans and land through the processes of evaporation and condensation. As a basis for understanding this concept:</b>  |
| <b>5ES3.a.</b> | <i>Students know</i> most of Earth's water is present as salt water in the oceans, which cover most of Earth's surface.  |
| <b>5ES3.b.</b> | <i>Students know</i> when liquid water evaporates, it turns into water vapor in the air and can reappear as a liquid when cooled or as a solid if cooled below the freezing point of water.                        |
| <b>5ES3.c.</b> | <i>Students know</i> water vapor in the air moves from one place to another and can form fog or clouds, which are tiny droplets of water or ice, and can fall to Earth as rain, hail, sleet, or snow.              |
| <b>5ES3.d.</b> | <i>Students know</i> that the amount of fresh water located in rivers, lakes, underground sources, and glaciers is limited and that its availability can be extended by recycling and decreasing the use of water. |
| <b>5ES3.e.</b> | <i>Students know</i> the origin of the water used by their local communities.  |
| <b>5ES4.</b>   | <b>Energy from the Sun heats Earth unevenly, causing air movements that result in changing weather patterns. As a basis for understanding this concept:</b>  |
| <b>5ES4.a.</b> | <i>Students know</i> uneven heating of Earth causes air movements (convection currents).   |
| <b>5ES4.b.</b> | <i>Students know</i> the influence that the ocean has on the weather and the role that the water cycle plays in weather patterns.  |
| <b>5ES4.c.</b> | <i>Students know</i> the causes and effects of different types of severe weather.  |
| <b>5ES4.d.</b> | <i>Students know</i> how to use weather maps and data to predict local weather and know that weather forecasts depend on many variables.   |
| <b>5ES4.e.</b> | <i>Students know</i> that the Earth's atmosphere exerts a pressure that decreases with distance above Earth's surface and that at any point it exerts this pressure equally in all directions.                     |
| <b>5ES5.</b>   | <b>The solar system consists of planets and other bodies that orbit the Sun in predictable paths. As a basis for understanding this concept:</b>   |
| <b>5ES5.a.</b> | <i>Students know</i> the Sun, an average star, is the central and largest body in the solar system and is composed primarily of hydrogen and helium.   |
| <b>5ES5.b.</b> | <i>Students know</i> the solar system includes the planet Earth, the Moon, the Sun, eight other planets and their satellites, and smaller objects, such as asteroids and comets.                                   |
| <b>5ES5.c.</b> | <i>Students know</i> the path of a planet around the Sun is due to the gravitational attraction between the Sun and the planet.  |

## THE EARTH SCIENCES REPORTING CLUSTER

The following five California content standards are included in the Grade 4 Earth Sciences reporting cluster and are represented in this booklet by four test questions. These questions represent only some ways in which these standards may be assessed on the California Grade 5 Science Standards Test.

### CALIFORNIA CONTENT STANDARDS IN THIS REPORTING CLUSTER

#### Earth Sciences

##### Grade 4 Standards

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|----------------|--|
| <b>4ES4.</b>   | <b>The properties of rocks and minerals reflect the processes that formed them. As a basis for understanding this concept:</b>   |
| <b>4ES4.a.</b> | <i>Students know</i> how to differentiate among igneous, sedimentary, and metamorphic rocks by referring to their properties and methods of formation (the rock cycle).  |
| <b>4ES4.b.</b> | <i>Students know</i> how to identify common rock-forming minerals (including quartz, calcite, feldspar, mica, and hornblende) and ore minerals by using a table of diagnostic properties.                            |
| <b>4ES5.</b>   | <b>Waves, wind, water, and ice shape and reshape Earth's land surface. As a basis for understanding this concept:</b>  |
| <b>4ES5.a.</b> | <i>Students know</i> some changes in the earth are due to slow processes, such as erosion, and some changes are due to rapid processes, such as landslides, volcanic eruptions, and earthquakes.                     |
| <b>4ES5.b.</b> | <i>Students know</i> natural processes, including freezing and thawing and the growth of roots, cause rocks to break down into smaller pieces.   |
| <b>4ES5.c.</b> | <i>Students know</i> moving water erodes landforms, reshaping the land by taking it away from some places and depositing it as pebbles, sand, silt, and mud in other places (weathering, transport, and deposition). |



## INVESTIGATION AND EXPERIMENTATION

The following nine California content standards are distributed among the Grade 5 reporting clusters and are represented in this booklet by two test questions. These questions represent only some ways in which these standards may be assessed on the California Grade 5 Science Standards Test.

### CALIFORNIA CONTENT STANDARDS

#### Investigation and Experimentation

##### Grade 5 Standards

- |                |  |
|----------------|--|
| <b>5IE6.</b>   | <b>Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:</b> |
| <b>5IE6.a.</b> | Classify objects (e.g., rocks, plants, leaves) in accordance with appropriate criteria.  |
| <b>5IE6.b.</b> | Develop a testable question.   |
| <b>5IE6.c.</b> | Plan and conduct a simple investigation based on a student-developed question and write instructions others can follow to carry out the procedure.   |
| <b>5IE6.d.</b> | Identify the dependent and controlled variables in an investigation.   |
| <b>5IE6.e.</b> | Identify a single independent variable in a scientific investigation and explain how this variable can be used to collect information to answer a question about the results of the experiment.  |
| <b>5IE6.f.</b> | Select appropriate tools (e.g., thermometers, meter sticks, balances, and graduated cylinders) and make quantitative observations.   |
| <b>5IE6.g.</b> | Record data by using appropriate graphic representations (including charts, graphs, and labeled diagrams) and make inferences based on those data.   |
| <b>5IE6.h.</b> | Draw conclusions from scientific evidence and indicate whether further information is needed to support a specific conclusion.   |
| <b>5IE6.i.</b> | Write a report of an investigation that includes conducting tests, collecting data or examining evidence, and drawing conclusions.   |

## INVESTIGATION AND EXPERIMENTATION

The following six California content standards are distributed among the Grade 4 reporting clusters and are represented in this booklet by two test questions. These questions represent only some ways in which these standards may be assessed on the California Grade 5 Science Standards Test.

### CALIFORNIA CONTENT STANDARDS

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#### Investigation and Experimentation

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##### Grade 4 Standards

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- |                |  |
|----------------|--|
| <b>4IE6.</b>   | <b>Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:</b> |
| <b>4IE6.a.</b> | Differentiate observation from inference (interpretation) and know scientists' explanations come partly from what they observe and partly from how they interpret their observations.  |
| <b>4IE6.b.</b> | Measure and estimate the weight, length, or volume of objects.   |
| <b>4IE6.c.</b> | Formulate and justify predictions based on cause-and-effect relationships.   |
| <b>4IE6.d.</b> | Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.   |
| <b>4IE6.e.</b> | Construct and interpret graphs from measurements.  |
| <b>4IE6.f.</b> | Follow a set of written instructions for a scientific investigation.   |
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## Released Test Questions

## Science

5

**1** Which action will result in a product with new chemical properties?

- A shredding a newspaper
- B breaking a mirror
- C cutting wood
- D popping popcorn

**2** Sterling silver is a combination of silver and copper. Which of the following is also a combination of two or more metals?

- A aluminum
- B lead
- C gold
- D brass

**3** A scientist needs to take a picture of the well-ordered arrangements of the atoms and molecules within a substance. Which of the following instruments would be *best* for the scientist to use?

- A a laser light with holograph
- B a seismograph
- C an electron microscope
- D a stereoscope

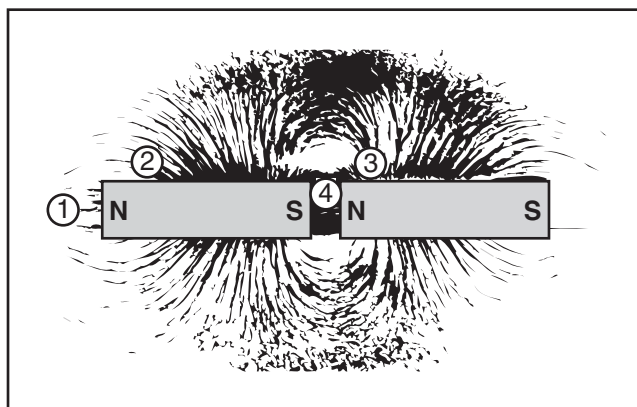
**4** All living things contain which element?

- A helium
- B sodium
- C copper
- D carbon

**5** Which *best* describes a parallel circuit?

- A Electricity flows along one pathway.
- B The flow of electricity comes from one source.
- C Electricity flows along more than one pathway.
- D The flow of electricity comes from more than one source.

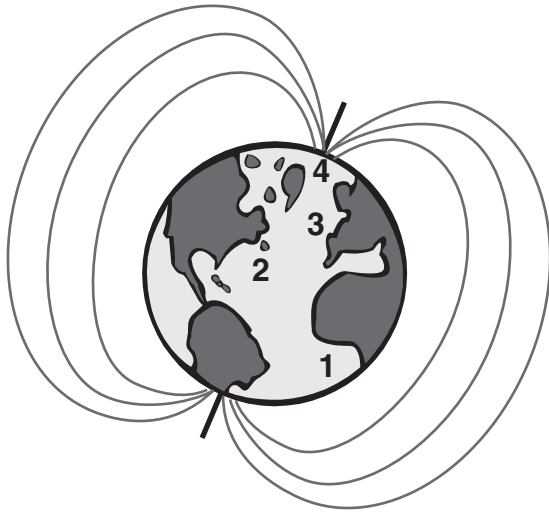
**6** Iron filings and bar magnets were placed on a sheet of paper. The following diagram shows the pattern made on the paper.



At which location is the magnetic field the strongest?

- A 1
- B 2
- C 3
- D 4

- 7 The diagram below shows that the magnetic field of Earth is similar to that of a bar magnet.



At which location is Earth's magnetic field the strongest?

- A 1  
B 2  
C 3  
D 4
- 8 Which of the following converts electrical energy into motion?  
A light switch  
B electric stove  
C light bulb  
D electric fan
- 9 Which list gives the correct order of food traveling through the digestive system after it is swallowed?  
A stomach, esophagus, large intestine, small intestine  
B small intestine, large intestine, esophagus, stomach  
C esophagus, stomach, large intestine, small intestine  
D esophagus, stomach, small intestine, large intestine
- 10 Which organ removes cell waste from the blood?  
A the large intestine  
B the small intestine  
C the kidney  
D the heart
- 11 Which of the following *best* explains how stems transport water to other parts of the plant?  
A through a chemical called chlorophyll  
B by using photosynthesis  
C through a system of tubes  
D by converting water to food
- 12 Which of the following gases do plants use in photosynthesis?  
A hydrogen  
B oxygen  
C carbon dioxide  
D carbon monoxide

## Released Test Questions

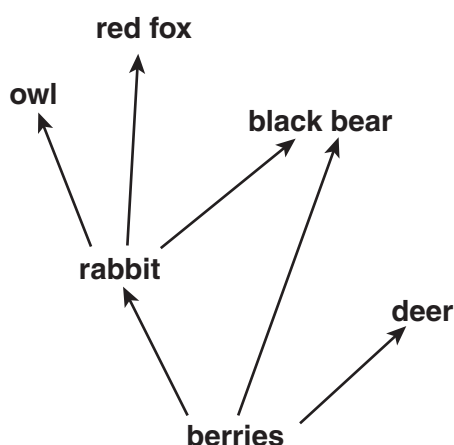
## Science

5

- 13** Which of the following is broken down in the body to release energy?

A sugar  
B water  
C salt  
D oxygen

- 14** The diagram below shows a simple food web.



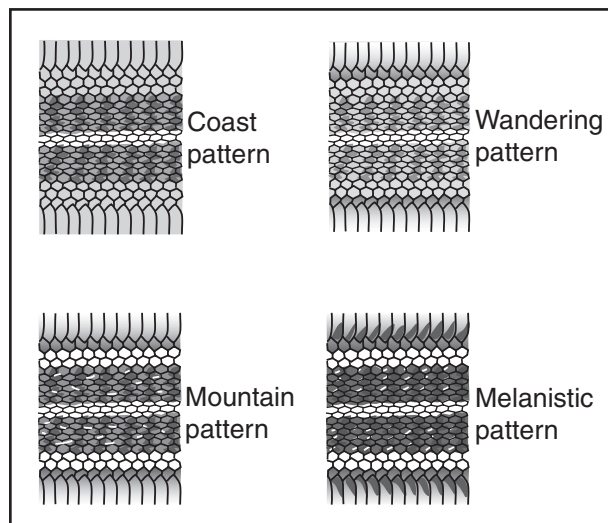
Which animal is classified as an omnivore?

A red fox  
B deer  
C black bear  
D rabbit

- 15** Which of the following is a living component of a desert in California?

A low rainfall  
B hot temperature  
C polar bear  
D horned lizard

- 16** Shown below are four different skin patterns found in the western garter snake.



The patterns *most* likely reflect differences in the snakes'

A life cycle.  
B food source.  
C size.  
D habitat.

- 17** Which animals are *most* likely to carry the seeds found in berries from the parent plant to another area?

A bees  
B birds  
C flies  
D caterpillars

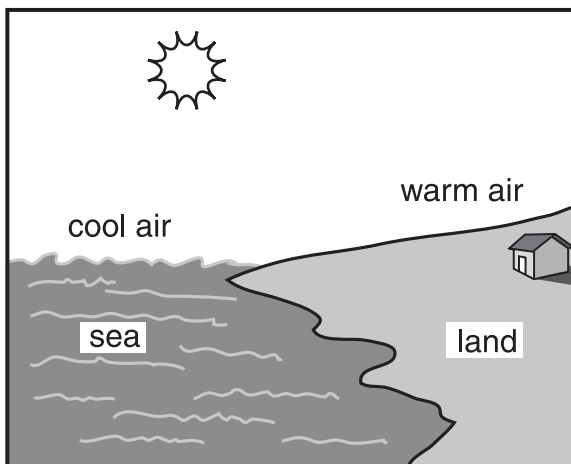
**18** Where is *most* of Earth's water located?

- A glaciers
- B lakes
- C oceans
- D rivers

**19** Why is watering plants and grass in the early morning a way to conserve water?

- A There is always more water in the morning.
- B Smaller amounts of water evaporate in the cool morning.
- C Water used in the morning can be recycled for afternoon use.
- D Grass can absorb water only in the morning.

**20** The picture below shows a place where air currents will form due to the uneven heating of Earth.



In which direction will air currents *most* likely move?

- A straight down over the land
- B from the land toward the sea
- C straight up above the sea
- D from the sea toward the land

**21** The largest body in our solar system is

- A Earth.
- B the Sun.
- C Jupiter.
- D the Moon.

**22** Which of these revolves around a planet?

- A an asteroid
- B a star
- C a comet
- D a moon

**23** Why are *most* fossils found in sedimentary rocks?

- A Sedimentary rocks are not very old.
- B Organisms live only in areas with sedimentary rock.
- C Organisms can be preserved in sedimentary rock.
- D Sedimentary rocks are found only at the surface of the ground.

**24** A student is trying to identify a mineral that has a nonmetallic luster and is black. It can also be scratched with a fingernail. According to the mineral information sheet, the unidentified mineral is *most* likely

- A mica.
- B magnetite.
- C hornblende.
- D quartz.

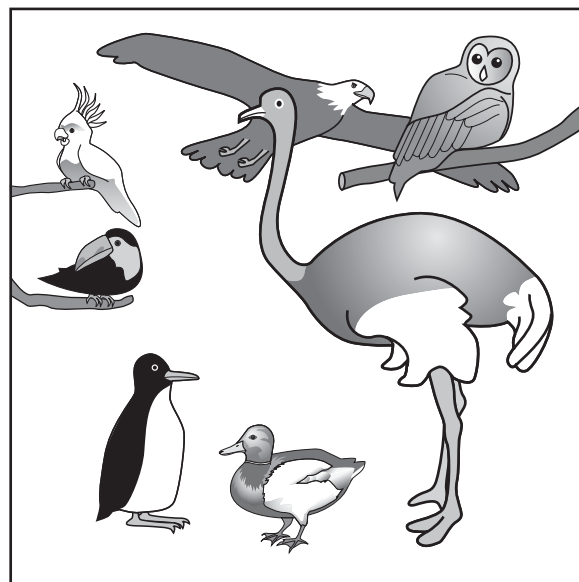
## Released Test Questions

## Science

## 5

- 25** How do plants *most* commonly break large rocks into smaller pieces?
- A Plant leaves insulate surrounding rocks from extreme temperatures.
  - B Plant roots grow into cracks in rocks.
  - C Seeds from plants fall onto rocks and release acidic compounds.
  - D Stems of plants surround and squeeze rocks.
- 26** Moving water was the *most* important factor in forming which of these?
- A the Grand Canyon
  - B San Andreas Fault
  - C the Rocky Mountains
  - D Mount St. Helens Volcano

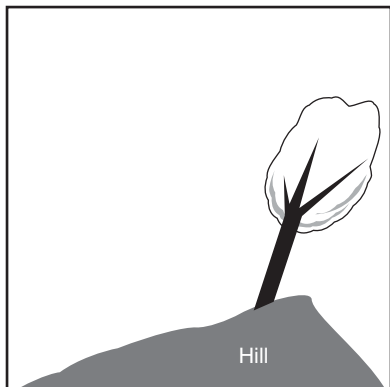
- 27** The picture below shows several different birds.



What characteristic do all birds share?

- A They can fly.
  - B They have feathers.
  - C They have webbed feet.
  - D They eat worms.
- 28** Which of the following questions is testable in a scientific investigation?
- A Are dogs better pets than cats?
  - B Are dogs happy when they are walked?
  - C Are cats more active at night than during the day?
  - D Are cats easier to take care of than dogs?

- 29** A group of students observed the following tree while hiking through a hilly area.



What is the *most* likely cause for the angle of growth of this tree?

- A The tree is reaching toward the afternoon sunlight.
- B Water rolling down the hill uprooted the tree.
- C Large rocks hit the tree when they rolled down the hill.
- D Strong uphill winds have pushed against the tree.

- 30** The chart below shows the results of an experiment designed to study how exercise affects heart rate.

Activity Stage	Heart Rate of Person A (beats per min.)	Heart Rate of Person B (beats per min.)	Heart Rate of Person C (beats per min.)
Before exercise	75	62	70
After exercise	120	110	130

Which of the following statements is the *best* conclusion for this experiment?

- A Exercise triples a person's heart rate.
- B Exercise decreases a person's heart rate.
- C Heart rate is not affected by exercise.
- D Heart rate is increased by exercise.



## Released Test Questions

## Science

5

Question Number	Correct Answer	Standard	Year of Test
1	D	5PS1.A	2005
2	D	5PS1.C	2004
3	C	5PS1.E	2004
4	D	5PS1.H	2005
5	C	4PS1.A	2005
6	D	4PS1.F	2004
7	D	4PS1.F	2005
8	D	4PS1.G	2004
9	D	5LS2.C	2004
10	C	5LS2.D	2005
11	C	5LS2.E	2005
12	C	5LS2.F	2004
13	A	5LS2.G	2005
14	C	4LS2.B	2005
15	D	4LS3.A	2004
16	D	4LS3.B	2005
17	B	4LS3.C	2004
18	C	5ES3.A	2004
19	B	5ES3.D	2005
20	D	5ES4.A	2004
21	B	5ES5.A	2005
22	D	5ES5.B	2004
23	C	4ES4.A	2004
24	A	4ES4.B	2004
25	B	4ES5.B	2005
26	A	4ES5.C	2005
27	B	5IE6.A	2005
28	C	5IE6.B	2004
29	D	4IE6.A	2005
30	D	4IE6.D	2004

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 <b>H</b> Hydrogen	2 <b>He</b> Helium	3 <b>Li</b> Lithium	4 <b>Be</b> Beryllium	5 <b>B</b> Boron	6 <b>C</b> Carbon	7 <b>N</b> Nitrogen	8 <b>O</b> Oxygen	9 <b>F</b> Fluorine	10 <b>Ne</b> Neon	11 <b>Na</b> Sodium	12 <b>Mg</b> Magnesium	13 <b>Al</b> Aluminum	14 <b>Si</b> Silicon	15 <b>P</b> Phosphorus	16 <b>S</b> Sulfur	17 <b>Cl</b> Chlorine	18 <b>Ar</b> Argon
19 <b>K</b> Potassium	20 <b>Ca</b> Calcium	21 <b>Sc</b> Scandium	22 <b>Ti</b> Titanium	23 <b>V</b> Vanadium	24 <b>Cr</b> Chromium	25 <b>Mn</b> Manganese	26 <b>Fe</b> Iron	27 <b>Co</b> Cobalt	28 <b>Ni</b> Nickel	29 <b>Cu</b> Copper	30 <b>Zn</b> Zinc	31 <b>Ga</b> Gallium	32 <b>Ge</b> Germanium	33 <b>As</b> Arsenic	34 <b>Se</b> Selenium	35 <b>Br</b> Bromine	36 <b>Kr</b> Krypton
37 <b>Rb</b> Rubidium	38 <b>Sr</b> Strontium	39 <b>Y</b> Yttrium	40 <b>Zr</b> Zirconium	41 <b>Nb</b> Niobium	42 <b>Mo</b> Molybdenum	43 <b>Tc</b> Technetium	44 <b>Ru</b> Ruthenium	45 <b>Rh</b> Rhodium	46 <b>Pd</b> Palladium	47 <b>Ag</b> Silver	48 <b>Cd</b> Cadmium	49 <b>In</b> Indium	50 <b>Sn</b> Tin	51 <b>Sb</b> Antimony	52 <b>Te</b> Tellurium	53 <b>I</b> Iodine	54 <b>Xe</b> Xenon
55 <b>Cs</b> Cesium	56 <b>Ba</b> Barium	57 <b>La</b> Lanthanum	72 <b>Hf</b> Hafnium	73 <b>Ta</b> Tantalum	74 <b>W</b> Tungsten	75 <b>Re</b> Rhenium	76 <b>Os</b> Osmium	77 <b>Ir</b> Iridium	78 <b>Pt</b> Platinum	79 <b>Au</b> Gold	80 <b>Hg</b> Mercury	81 <b>Tl</b> Thallium	82 <b>Pb</b> Lead	83 <b>Bi</b> Bismuth	84 <b>Po</b> Polonium	85 <b>At</b> Astatine	86 <b>Rn</b> Radon
87 <b>Fr</b> Francium	88 <b>Ra</b> Radium	89 <b>Ac</b> Actinium	104 <b>Rf</b> Rutherfordium	105 <b>Db</b> Dubnium	106 <b>Sg</b> Seaborgium	107 <b>Bh</b> Bohrium	108 <b>Hs</b> Hassium	109 <b>Mt</b> Meitnerium									
71 <b>Lu</b> Lutetium	70 <b>Yb</b> Ytterbium	69 <b>Tm</b> Thulium	68 <b>Er</b> Erbium	67 <b>Ho</b> Holmium	66 <b>Dy</b> Dysprosium	65 <b>Tb</b> Terbium	64 <b>Gd</b> Gadolinium	63 <b>Eu</b> Europium	62 <b>Sm</b> Samarium	61 <b>Pm</b> Promethium	60 <b>Nd</b> Neodymium	59 <b>Pr</b> Praseodymium	58 <b>Ce</b> Cerium	103 <b>La</b> Lanthanum	102 <b>No</b> Nobelium	101 <b>Md</b> Mendelevium	100 <b>Fm</b> Fermium

## Key

11	—	Atomic number	<input type="checkbox"/>	Metals
	Na	—	Element symbol	Metalloids (semimetals)
	Sodium	—	Element name	Nonmetals

# Grade 5 Science Reference Sheet

California Standards Test

Mineral Information

**Mineral Identification Table**

Mineral	Hardness	Luster	Streak	Color	Other
Calcite	3	nonmetallic	white	colorless, white	bubbles when acid is placed on it
Feldspar	6	nonmetallic	none	colorless, beige, pink	
Galena	2.5 – 3	metallic	gray	lead-gray	heavy for its size
Gold	2.5 – 3	metallic	golden yellow	yellow	used for jewelry
Graphite	1 – 2	metallic	black	gray to black	feels greasy
Hematite	5 – 6.5	metallic or nonmetallic	reddish brown	silver-gray or red	
Hornblende	5 – 6	nonmetallic	none	dark green to black	
Magnetite	6	metallic	black	black	magnetic
Mica	2 – 2.5	nonmetallic	none	dark brown, black or silver-white	flakes when peeled
Pyrite	6 – 6.5	metallic	greenish black	brassy yellow	called “fool’s gold”
Quartz	7	nonmetallic	none	colorless, white, rose, smoky, purple, brown	
Talc	1	nonmetallic	white	white, greenish to gray	feels greasy

**Mohs Hardness Scale**

Mineral	Hardness
Talc	1
Gypsum	2
2.5 Fingernail	
Calcite	3
3.2 Copper Penny	
Fluorite	4
Apatite	5
5.5 Glass	
Feldspar	6
6.5 Steel File	
Quartz	7
Topaz	8
Corundum	9
Diamond	10